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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,181	08/26/2003	Satoki Shibayama	0828.68273	4420

7590 02/21/2008	EXAMINER
Patrick G. Burns, Esq. GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Dr. Chicago, IL 60606	VO, LILIAN

ART UNIT	PAPER NUMBER
2195	

MAIL DATE	DELIVERY MODE
02/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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	Application No.	**Applicant(s)**
Notice of Allowability	10/648,181	SHIBAYAMA ET AL.
	Examiner	**Art Unit**	
	LILIAN VO	2195	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included
herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS
NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative
of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to _12/6/08_.

2. ☒ The allowed claim(s) is/are _1, 3, 6, 7, 8 and 12-14 now renumbered as 1 - 8_.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the
          International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements
noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF
    INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of
    each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the
    attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),
    Paper No./Mail Date _20080214_ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

2.   Authorization for this examiner's amendment was given in a telephone interview with

Mr. Joe Kim on 1/31/08.

3.   The application has been amended as follows:

In the claims:

i)   **Delete claims 2 and 9**

ii)   **Replace claim 1:**

Claim 1 (Currently Amended): A parallel process execution method with which a

plurality of processors execute a plurality of parallel processes produced from a parallel

program together with other processes in a time-shared fashion, the method comprising

the steps of:

        (a) setting a time allocation ratio that determines how much of a given cycle

period should be allocated for execution of the parallel program, <u>wherein said setting step</u>

<u>sets the time allocation ratio to the parallel program by dividing the given cycle period</u>

into a plurality of time slots and determining which process to execute in each time slot

of the different processors;

(b) providing a set of criteria before hand for use in determining what to execute

in a free time slot that has no process assigned, wherein the set of criteria including a

throughput-first policy which allows batch processes to run in the free time slot and a

turnaround-first policy which allows no batch process to run in the free time slot;

(c) according to the set of criteria, selecting either the throughput-first policy or

the turnaround-first policy at each of the processors which process to be executed in the

free time slot;

(d) assigning each parallel process of the parallel program to one of the plurality

of processors, and starting execution of the assigned parallel processes simultaneously on

the plurality of processors; and

(e) stopping the execution of the assigned parallel processes simultaneously on

the plurality of processors, when the time elapsed since the start of the parallel processes

has reached a point that corresponds to the time allocation ratio that has been set to the

parallel program.

iii)   **Claim 3:**

Line 2, replace "2" with --1 --;

iv)   **Replace claim 8**

Claim 8 (Currently Amended): A multiprocessor computer which employs a plurality of processors to execute a plurality of parallel processes produced from a parallel program together with other processes in a time-shared fashion, comprising:

a time allocation ratio setting unit that sets a time allocation ratio that determines how much of a given cycle period should be allocated for execution of the parallel program, and provides a set of criteria before hand for use in determining what to execute in a free time slot that has no process assigned, wherein the set of criteria including a throughput-first policy which allows batch processes to run in the free time slot, and a turnaround-first policy which allows no batch process to run in the free time slot, wherein said time allocation ration setting unit divides the given cycle period into a plurality of time slots and determines which process to execute in each time slot of the different processors; and

a process execution unit that causes each of the processors to select either the throughput-first policy or the turnaround-first policy, according to the set of criteria, which process to execute in the free time slot, assigns each parallel process of the parallel program to one of the plurality of processors, starts execution of the assigned parallel processes simultaneously on the plurality of processors, and stops the execution of the assigned parallel processes simultaneously on the plurality of processors when the time elapsed since the start of the parallel processes has reached a point that corresponds to the time allocation ratio.

v)   **Replace claim 12**

Claim 12 (Currently Amended): A multiprocessor computer system for executing a

plurality of parallel processes produced from a parallel program together with other

processes in a time-shared fashion, the multiprocessor computer system comprising:

a plurality of nodes, each comprising at least one processor; and

a coordination controller that generates interrupt notifications to-a the plurality of

nodes simultaneously;

wherein each node comprises:

a time allocation ratio setting unit that sets a time allocation ratio that determines

how much of a given cycle period should be allocated for execution of the parallel

program, wherein said time allocation ratio setting unit divides the given cycle period

into a plurality of time slots and determines which process to execute in each time slot of

the different processors;

provides a set of criteria before hand for use in determining what to execute in a

free time slot that has no process assigned, wherein the set of criteria including a

throughput-first policy which allows batch processes to run in the free time slot and a

turnaround-first policy which allows no batch process to run in the free time slot;

a process execution unit that causes each of the processors to select either the

throughput-first policy or the turnaround-first policy, according to the set of criteria,

which process to be executed in the free time slot; and

a process execution unit assigns each parallel process of the parallel program to

processors, starts execution of the assigned parallel processes simultaneously on the

processors, and stops the execution of the assigned parallel processes simultaneously on

the processors when the time elapsed since the start of the parallel processes has reached

a point that corresponds to the time allocation ratio <u>that has been set to the parallel</u>

<u>program</u>.

vi)   **Replace claim 13**

Claim 13 (Currently Amended) A parallel process execution program for use with a

plurality of processors to execute a plurality of parallel processes produced from a

parallel program together with other processes in a time-shared fashion, the program

causing a computer to perform the steps of:

setting a time allocation ratio that determines how much of a given cycle period

should be allocated for execution of the parallel program, <u>wherein said setting step sets</u>

<u>the time allocation ratio to the parallel program by dividing the given cycle period into a</u>

<u>plurality of time slots and determining which process to execute in each time slot of the</u>

<u>different processors</u>;

providing a set of criteria <u>before hand for use in determining what to execute in a</u>

<u>free time slot that has no process assigned, wherein the set of criteria</u> including a

throughput-first policy which allows batch processes to run in the free time slot, and a

turnaround-first policy which allows no batch process to run in the free time slot;

according to the <u>set of</u> criteria, selecting <u>either the throughput-first policy or the</u>

<u>turnaround-first policy</u> at each of the processors which process to be executed in the free

time slot;

assigning each parallel process of the parallel program to one of the plurality of

processors, and starting execution of the assigned parallel processes simultaneously on

the plurality of processors; and

. stopping the execution of the assigned parallel processes simultaneously on the

plurality of processors, when the time elapsed since the start of the parallel processes has

reached a point that corresponds to the time allocation ratio that has been set to the

parallel program to allocate the given cycle period.

vii)   **Replace claim 14**

Claim 14 (Currently Amended): A computer-readable <u>storage</u> medium storing a program

to execute a plurality of parallel processes produced from a parallel program together

with other processes in a time-shared fashion, the program <u>when execute by a plurality of</u>

<u>processors</u> causing the computers to perform the steps of:

setting a time allocation ratio that determines how much of a given cycle

period should be allocated for execution of the parallel program, <u>wherein said setting step</u>

<u>sets the time allocation ratio to the parallel program by dividing the given cycle period</u>

<u>into a plurality of time slots and determining which process to execute in each time slot</u>

<u>of the different processors;</u>

providing a set of criteria <u>before hand for use in determining what to execute in a</u> <u>free time slot that has no process assigned, wherein the set of criteria</u> including a throughput-first policy which allows batch processes to run in the free time slot, and a turnaround-first policy which allows no batch process to run in the free time slot;

according to the <u>set of</u> criteria, selecting <u>either the throughput-first policy or the</u> <u>turnaround-first policy</u> at each of the processors which process to be executed in the free time slot;

assigning each parallel process of the parallel program to one of the plurality of processors, and starting execution of the assigned parallel processes simultaneously on the plurality of processors; and

stopping the execution of the assigned parallel processes simultaneously on the plurality of processors, when the time elapsed since the start of the parallel processes has reached a point that corresponds to the time allocation ratio that has been set to the parallel program to allocate the given cycle period.

4.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to LILIAN VO whose telephone number is (571)272-3774. The examiner can normally be reached on Thursday 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lilian Vo
Examiner
Art Unit 2195

lv
February 14, 2008

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